

WHAT IS CLAIMED IS:

1. A semiconductor device comprising a silicon substrate, and a bipolar transistor having a collector well having a first conductivity-type, an intrinsic base region having a second conductivity-type and received in said collector well and an emitter region having said first conductivity-type and received in said intrinsic base region, a first annular isolation trench encircling said collector well, a second annular isolation trench encircling said first annular isolation trench, and an annular diffused region disposed between said first annular isolation trench and said second annular isolation trench while being in contact with said first and second annular isolation trenches.

2. The semiconductor device as defined in claim 1, wherein said intrinsic base region and said collector well are provided with a base electrode and a collector electrode, and each of said base electrode, said collector electrode and said annular diffused region is provided with a silicide layer on top thereof.

3. The semiconductor device as defined in claim 1, further comprising a MOSFET.

4. The semiconductor device as defined in claim 1, wherein said annular diffused region includes a first intermittent

annular sub-region including a plurality of first diffused regions and a second intermittent annular sub-region including a plurality of second diffused regions, and said first diffused regions and said second diffused regions are arranged alternately along said annular diffused region.

5. The semiconductor device as defined in claim 4, further comprising a third annular isolation trench disposed between said first intermittent annular region and said second intermittent annular region.

6. The semiconductor device as defined in claim 6, wherein said silicon substrate has said second conductivity-type.

7. The semiconductor device as defined in claim 6, wherein said first conductivity-type is n-type and said second conductivity-type is p-type.

8. The semiconductor device as defined in claim 6, wherein said silicon substrate has said first conductivity-type, and includes a well having said second conductivity-type and receiving therein said collector well.

9. The semiconductor device as defined in claim 8, wherein said bipolar transistor is a PNP transistor.

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10. The semiconductor device as defined in claim 1, further comprising a third annular isolation trench encircling said second annular isolation trench, and another annular diffused region disposed between said second annular isolation trench and said third annular isolation trench while being in contact with said second and third annular isolation trenches.

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